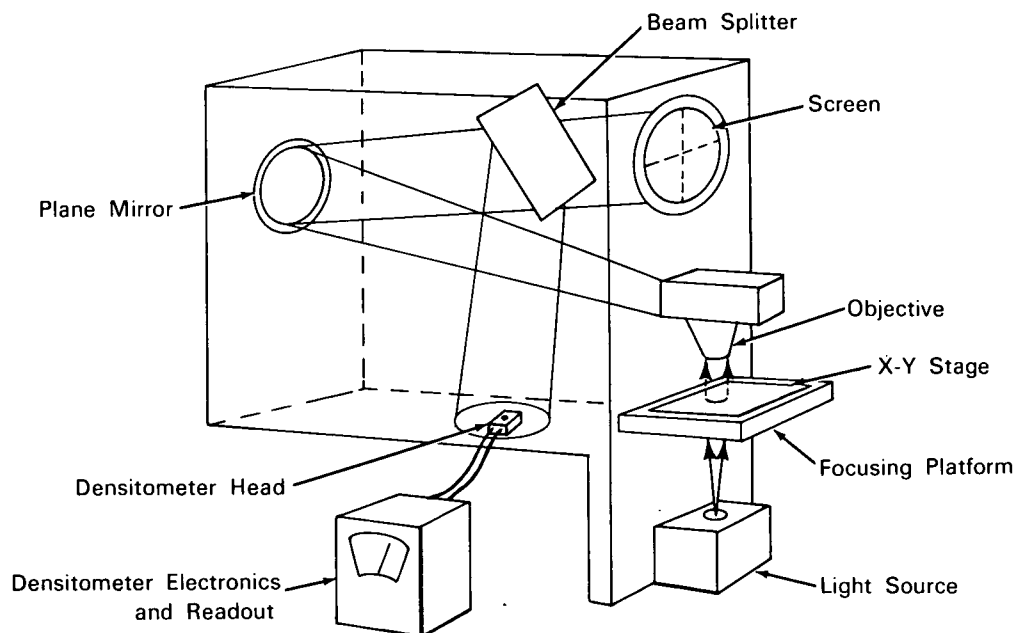


NASA TECH BRIEF



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Modified Contour Projector Makes Excellent Contour Densitometer



The problem: A means is needed to render the density contour or profile of a photographic film image. It is desired to read the density of small areas with respect to their positions relative to some reference image point on the film.

The solution: A modification is made to a standard, commercially available contour projector and density contours are rendered of film images.

How it's done: A thin, glass beam splitter, a densitometer head, and densitometer electronics with readout are incorporated in a standard contour

projector. The beam splitter images part of the projected light beam onto the densitometer head. The densitometer head and viewing screen reticle are aligned to be coincident with respect to any given point on the film image. The x-y stage includes a film transport mechanism for frame-by-frame viewing plus fine positioning and distance measuring devices. The densities of all points of interest in the contour are examined using the same identical light path, thus avoiding any spatial inhomogeneities in the beam. Magnification change is readily accomplished by simply changing the power of the objective.

(continued overleaf)

Notes:

1. Density contours for different wavelengths can also be obtained by placing a wedge interference filter at the densitometer head. The desired wavelength is selected by varying the position of the filter with respect to the densitometer aperture.
2. This device should be a welcome research tool in process engineering.
3. Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Langley Research Center
Langley Station
Hampton, Virginia, 23365
Reference: B65-10084

Patent status: NASA encourages the immediate commercial use of this invention. Inquiries about obtaining rights for its commercial use may be made to NASA, Code AGP, Washington, D.C., 20546.

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(Langley-93)